

ARG43103
anti-MCU antibodyPackage: 50 µg
Store at: -20°C

Summary

Product Description	Rabbit Polyclonal antibody recognizes MCU
Tested Reactivity	Hu, Ms, Rat, Mk
Tested Application	FACS, IHC-P, WB
Host	Rabbit
Clonality	Polyclonal
Isotype	IgG
Target Name	MCU
Species	Human
Immunogen	Recombinant protein corresponding to V51-D351 of Human MCU.
Conjugation	Un-conjugated
Alternate Names	Calcium uniporter protein, mitochondrial; CCDC109A; C10orf42; Coiled-coil domain-containing protein 109A

Application Instructions

Application table	Application	Dilution
	FACS	1:150 - 1:500
	IHC-P	1:200 - 1:1000
	WB	1:500 - 1:2000
Application Note	IHC-P: Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). * The dilutions indicate recommended starting dilutions and the optimal dilutions or concentrations should be determined by the scientist.	
Observed Size	~ 31 kDa	

Properties

Form	Liquid
Purification	Affinity purification with immunogen.
Buffer	0.2% Na ₂ HPO ₄ , 0.9% NaCl, 0.01% Sodium azide and 4% Trehalose.
Preservative	0.01% Sodium azide
Stabilizer	4% Trehalose
Concentration	0.5 mg/ml
Storage instruction	For continuous use, store undiluted antibody at 2-8°C for up to a week. For long-term storage, aliquot and store at -20°C or below. Storage in frost free freezers is not recommended. Avoid repeated freeze/thaw cycles. Suggest spin the vial prior to opening. The antibody solution should be gently mixed

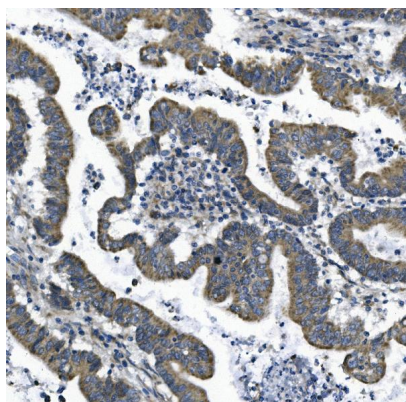
before use.

Note For laboratory research only, not for drug, diagnostic or other use.

Bioinformation

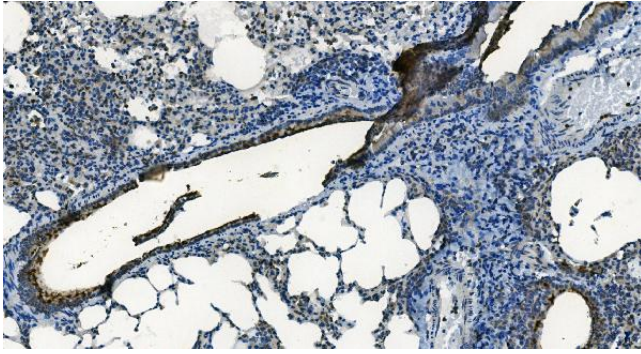
Gene Symbol	MCU
Gene Full Name	mitochondrial calcium uniporter
Background	This gene encodes a calcium transporter that localizes to the mitochondrial inner membrane. The encoded protein interacts with mitochondrial calcium uptake 1. Alternative splicing results in multiple transcript variants. [provided by RefSeq, Jul 2012]
Function	Mitochondrial inner membrane calcium uniporter that mediates calcium uptake into mitochondria (PubMed:21685888, PubMed:21685886, PubMed:23101630, PubMed:22904319, PubMed:23178883, PubMed:22829870, PubMed:22822213, PubMed:24332854, PubMed:23755363, PubMed:26341627). Constitutes the pore-forming and calcium-conducting subunit of the uniporter complex (uniplex) (PubMed:23755363). Activity is regulated by MICU1 and MICU2. At low Ca(2+) levels MCU activity is down-regulated by MICU1 and MICU2; at higher Ca(2+) levels MICU1 increases MCU activity (PubMed:24560927, PubMed:26903221). Mitochondrial calcium homeostasis plays key roles in cellular physiology and regulates cell bioenergetics, cytoplasmic calcium signals and activation of cell death pathways. Involved in buffering the amplitude of systolic calcium rises in cardiomyocytes (PubMed:22822213). While dispensable for baseline homeostatic cardiac function, acts as a key regulator of short-term mitochondrial calcium loading underlying a 'fight-or-flight' response during acute stress: acts by mediating a rapid increase of mitochondrial calcium in pacemaker cells (PubMed:25603276). participates in mitochondrial permeability transition during ischemia-reperfusion injury (By similarity). Regulates glucose-dependent insulin secretion in pancreatic beta-cells by regulating mitochondrial calcium uptake (PubMed:22904319, PubMed:22829870). Mitochondrial calcium uptake in skeletal muscle cells is involved in muscle size in adults (By similarity). Regulates synaptic vesicle endocytosis kinetics in central nerve terminal (By similarity). Involved in antigen processing and presentation (By similarity). [UniProt]
Calculated Mw	40 kDa
PTM	Phosphorylation by CaMK2 in heart leads to increased MCU current (PubMed:23051746, PubMed:25254481). The regulation of MCU by CaMK2 is however subject to discussion: another group was unable to reproduce these results (PubMed:25254480). Phosphorylated on tyrosines by PTK2B/PYK2, promoting oligomerization (PubMed:24800979). [UniProt]
Cellular Localization	Mitochondrion inner membrane; Multi-pass membrane protein. [UniProt]

Images



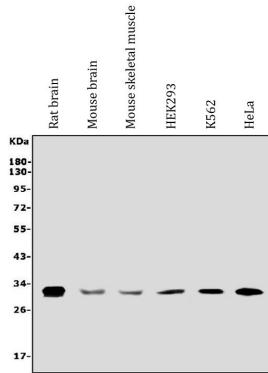
ARG43103 anti-MCU antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human rectal cancer tissue. Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). The tissue section was blocked with 10% goat serum. The tissue section was then stained with ARG43103 anti-MCU antibody at 2 µg/ml dilution, overnight at 4°C.



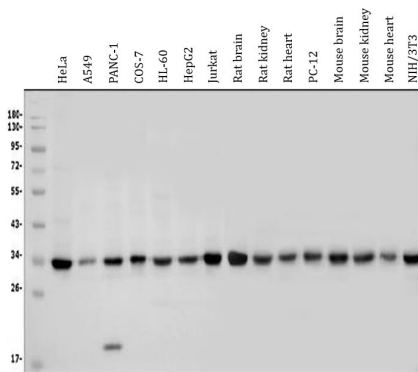
ARG43103 anti-MCU antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Mouse lung tissue. Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). The tissue section was blocked with 10% goat serum. The tissue section was then stained with ARG43103 anti-MCU antibody at 2 µg/ml dilution, overnight at 4°C.



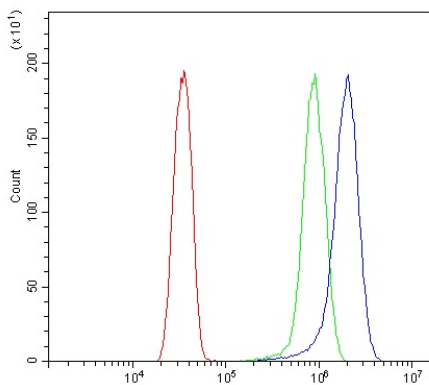
ARG43103 anti-MCU antibody WB image

Western blot: 50 µg of sample under reducing conditions. Rat brain, Mouse brain, Mouse skeletal muscle, HEK293, K562 and HeLa whole cell lysates stained with ARG43103 anti-MCU antibody at 0.5 µg/ml dilution, overnight at 4°C.



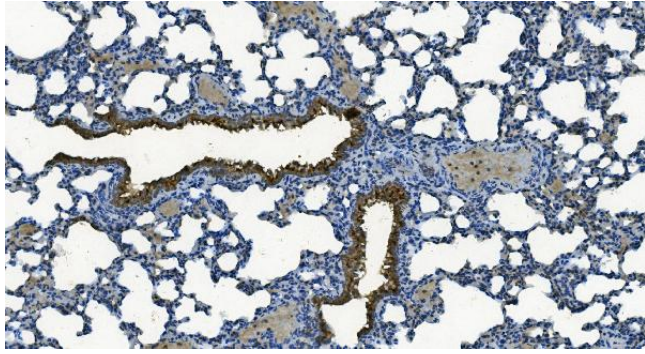
ARG43103 anti-MCU antibody WB image

Western blot: 50 µg of sample under reducing conditions. HeLa, A549, PANC-1, COS-7, HL-60, HepG2, Jurkat, Rat brain, Rat kidney, Rat heart, PC-12, Mouse brain, Mouse kidney, Mouse heart and NIH/3T3 whole cell lysates stained with ARG43103 anti-MCU antibody at 0.5 µg/ml dilution, overnight at 4°C.



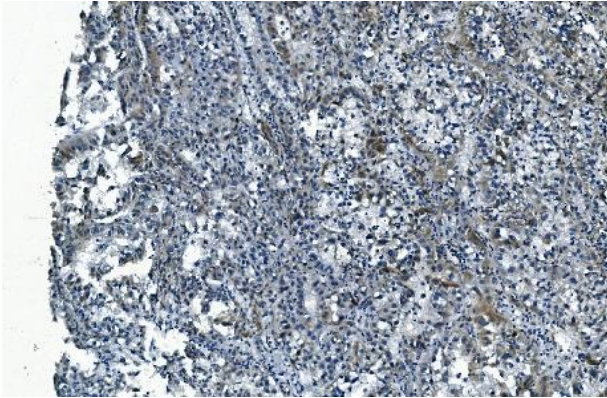
ARG43103 anti-MCU antibody FACS image

Flow Cytometry: HeLa cells were blocked with 10% normal goat serum and then stained with ARG43103 anti-MCU antibody (blue) at 1 µg/10⁶ cells for 30 min at 20°C, followed by incubation with DyLight®488 labelled secondary antibody. Isotype control antibody (green) was rabbit IgG (1 µg/10⁶ cells) used under the same conditions. Unlabelled sample (red) was also used as a control.



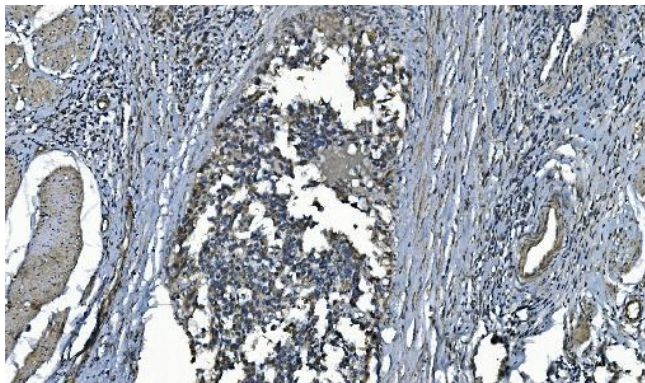
ARG43103 anti-MCU antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Rat lung tissue. Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). The tissue section was blocked with 10% goat serum. The tissue section was then stained with ARG43103 anti-MCU antibody at 2 $\mu\text{g}/\text{ml}$ dilution, overnight at 4°C.



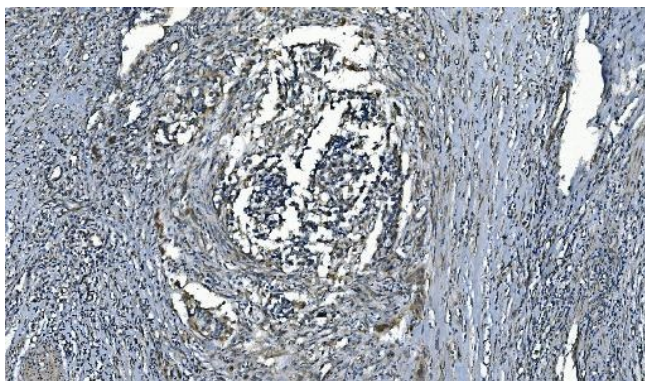
ARG43103 anti-MCU antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human liver cancer tissue. Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). The tissue section was blocked with 10% goat serum. The tissue section was then stained with ARG43103 anti-MCU antibody at 2 $\mu\text{g}/\text{ml}$ dilution, overnight at 4°C.



ARG43103 anti-MCU antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human bladder cancer tissue. Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). The tissue section was blocked with 10% goat serum. The tissue section was then stained with ARG43103 anti-MCU antibody at 2 $\mu\text{g}/\text{ml}$ dilution, overnight at 4°C.



ARG43103 anti-MCU antibody IHC-P image

Immunohistochemistry: Paraffin-embedded Human bladder cancer tissue. Antigen Retrieval: Heat mediation was performed in EDTA buffer (pH 8.0). The tissue section was blocked with 10% goat serum. The tissue section was then stained with ARG43103 anti-MCU antibody at 2 $\mu\text{g}/\text{ml}$ dilution, overnight at 4°C.
